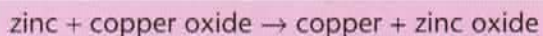


- Reactions involving compounds

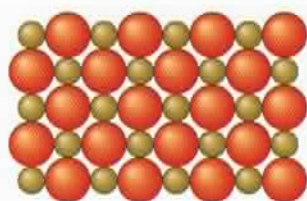
In a flash

Kevin's class is looking at reactions involving compounds. His teacher, Mrs McMichaels, shows them a reaction between copper oxide, a compound, and zinc, an element.

The word equation for the reaction is:



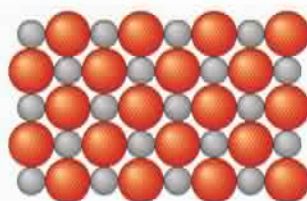
One compound, copper oxide, has reacted to make another compound, zinc oxide.



oxygen



copper



oxygen



zinc

Look at the diagram above showing the particles in copper oxide. Compare it to the diagram above right showing the particles in zinc oxide.

- Look at the photo above showing the reaction. How do you know that a chemical reaction has taken place?
- What are:
 - the reactants?
 - the products of this reaction?
- Where did the zinc atoms come from to make the zinc oxide?
- Where did the copper atoms go to when the copper oxide reacted?

All change

Kevin and Bianca then carry out a second reaction. They take some sodium iodide and they dissolve it in water. It makes a colourless solution. Then they take some lead nitrate and dissolve that in water. It makes another colourless solution.

Then they mix the two solutions.

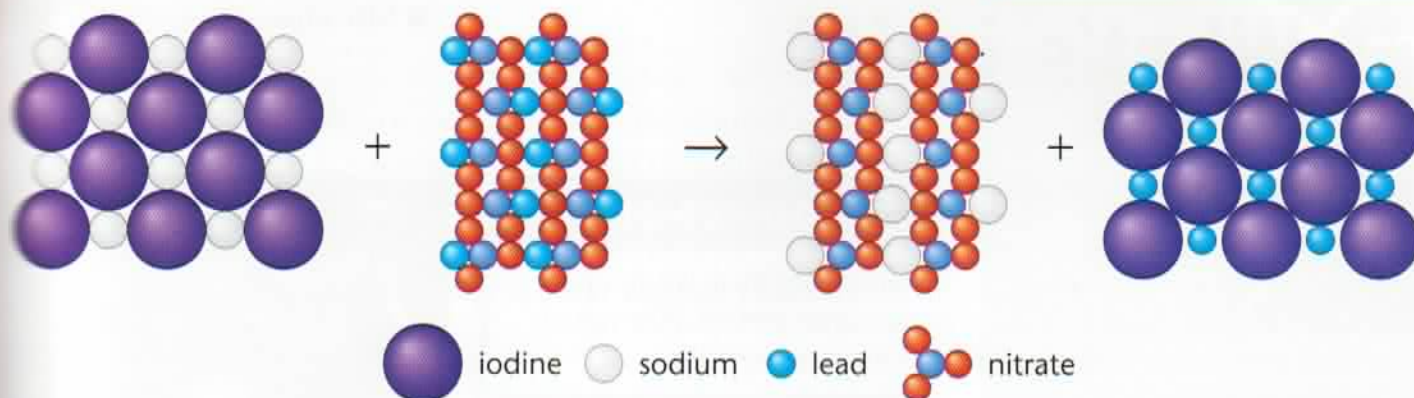
The reactants are sodium iodide and lead nitrate. The products are lead iodide and sodium nitrate. The lead iodide is the yellow solid. The lead iodide is a **precipitate**. A precipitate is a solid that is made when two liquids react.



Do you remember?

Bubbles, colour changes and energy being given out or taken in are all evidence of a chemical reaction. We call the substances we start with **reactants**. We call the substances we end up with **products**.





- 1 What two observations show that a chemical reaction has taken place?
- 2 Write a word equation for this reaction.
- 3 Use the diagram above to explain what happens when sodium chloride and lead nitrate react.

Bubble

Chemical reactions also happen in cells. Look at the photo on the right. The pea is in a solution of hydrogen peroxide. The cells change the hydrogen peroxide into water and oxygen.

- 1 What evidence, shown in the photo, shows that a chemical reaction is taking place?

The diagram below shows the compounds and elements involved in this reaction.



Questions

- 1 Which reaction, described on these two pages showed:
 - a a colour change?
 - b energy given out?
 - c bubbles being made?
 - d a precipitate?
 - e energy being taken in?
- 2 Look back at the diagram showing how the plant cells change hydrogen peroxide molecules.
 - a What is the formula of:
 - (i) hydrogen peroxide?
 - (ii) water?
 - (iii) glucose?
 - b What element is shown in this diagram?
 - c How many oxygen atoms are there in:
 - (i) the reactant molecules?
 - (ii) the product molecules?
 - d Predict, without counting, how the number of hydrogen atoms changes during the reaction.

For your notes:

- Compounds change into other compounds, or make elements, in chemical reactions.
- A **precipitate** is a solid made when two liquids react.